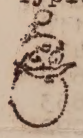
NOVEMBER BULLETIN 1970
VOL. 2 SAN ANTONIO RADIO CLUB NO.1

President--Floyd Roland, W5JKU
Vice President--Gene Jank, W5EJT
Secretary--John Thompson, WB5BGV
Treasurer--Frank Box WA5VFM
Sargeant-at-Arms--
Dan DeLay, W5DUI

Meets first and third Fridays at 7:30 p.m. at the Civil Defense Headquarters, 115 Auditorium Circle. All who have an INTEREST in amateur radio are cordially invited to attend.

Bulletin Editor, Dean Davis, W5BGE Published Bi-monthly (hopefully!)
Typist, Maybelle Davis, XYL-W5BGE.



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PREZ' KORN-ER

by W5JKU

The San Antonio Radio Club is starting on another year. At this time it is always good to look at the past and the future. Let's look at the past year (not the whole 50 or so years of the club's existance). The membership MAKES the club, and under the leadership of Ivan, W5RNV, this has been a going, growing club, ending the year with over 100 members. The year started with a bang with the '69 Christmas Party, where OM, XYL, YL, family and friends, (from this area as well as around the state) renewed old friendships. From January to August the club ran code and theory classes with instructors Rocky, K5MIF (theory) and Lee, K5HZR (code)--a job well done! W5SC, the club's station, had its share of activities: an 80-40 meter doublet and a 2 meter J-pole were installed at the San Antonio weather bureau so that in an emergency the club needs only to provide equipment; at the Jewish Center under the managership of Aubry, K5MOF, and Carl, WA5DQG, W5SC provides phone patches at the Servicemen's party every Sunday from 0900 to 1300. (An extra ham is always welcome!); W5SC at the Red Cross Center, under direction of the EC, Frank, W5QMH, handled over 400 messages during the Lubbock tornado, and during the hurricane Celia disaster W5SC went with the San Antonio team to Corpus and provided communications to W5SC-San Antonio; the Field Day under the co-chairmanship of Frank, W5QMH, and Leonard, K5IEG, was very successful with over 40 hams and 7 stations. A good score was made. The FD chair for 1971 is Frank, W5QMH, assisted by John Henderson--so start making your plans.

Another highlight of the year is the bi-monthly bulletin put out by the Publications committee, Dean, W5BGE, Maybelle Davis, Roy, W5EYB, and Lee, K5HZR. A job well done! I am glad to say that this committee has consented to continue thru the next year. In order to encourage these committees, we should be happy to continue being active club members. The '70 Christmas Party committee, Dean, W5BGE (arrangements and tickets), Gene, W5EJT (program), and John, WB5BGV (decorations) tell me the party on December 12th will be a good one. So, hope to see you there. 73, Floyd, W5JKU

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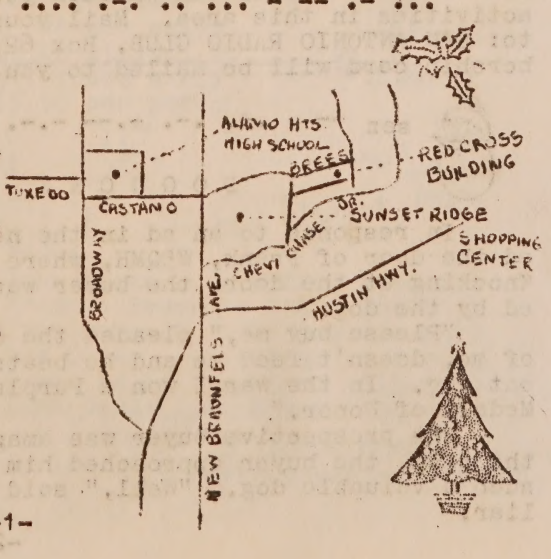
SARC MEETING PLACE TO BE CHANGED

SARC voted at the Nov. 6 meeting to change the location of its regular meeting sessions to the Red Cross Building, 90 Brees St., effective Jan. 15, 1971 meeting. This will correlate SARC with the Club Station, W5SC, and give better parking and less QRM. The map will help you locate the Red Cross Building.

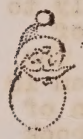


Since Jan. 1 is the first Friday in January, there will be

NO MEETING FRIDAY, JANUARY 1

P_L_E_A_S_E A_D_D T_H_E_S_E N_E_W N_E_W
M_E_M_B_E_R_S T_O T_H_E L_I_S_T Y_O_U
R_E_C_E_I_V_E_D I_N T_H_E S_E_P_T.
! ! B_U_L_L_E_T_I_N ! !

BETTIS,	William C.	W5GYW	543 Craigmont Ln.	78213	342-7264
CASE,	Bill	W5FNA	3522 Broadway	78209	822-1341
CENTO,	C. R.	K5DWX	Rt. 9, Box 203B	78211	623-2619
EISENMAN,	Bob	WA5ICH	4418 Hollyridge	78228	432-0118
FISHER,	Mark	WN5CVP	120 Wellesley	78209	826-4438
HENDERSON,	George H.	W5OI	2641 Nacogdoches Rd.		824-5612
HOSEA,	Tommy J.		323 Altgelt Ave.		733-0853
HUMLICK,	Lawrence P.	WA5PAF	254 Future Dr.		341-8092
JOERG,	Charles H.	WA5JVX	263 W. Hardin Blvd.	78221	
KELLY,	Wayne	W5FZH	163 Greenhaven		344-5950
KOLARS,	Keith L.	WAØRUX/5	511 Demya Dr.	78227	674-5955
LOVE,	Boyd R.	WN5BDS	234 Barrett Place		923-3831
MANISCALCO,	Chuck	K5AIU	146 Mink	78213	344-3230
McRENOLDS,	Dr. Rex,Jr.	WN5CYQ	500 Travertine	78213	344-2667
McRIGHT,	Bill	K5MTB	811 W. Mulberry,A#2	78212	735-9591
ORDWAY,	Sidney	WN6ZLK/5	1254 PrimaVista	78233	653-2827
ROBERTS,	John W.	K5OFJ	5526 Newcomb	78240	684-3890
STROUP,	Loren A.	W5WEU	110 Surfrider	78242	674-2849
TRAPPE,	Brenda		522 Sprucewood	78216	344-8082
TRAPPE,	Linda		522 Sprucewood	78216	344-8082
WARNER,	Clarence	W5HIV	247 Dawnview Ln.		344-5520
WHEATON,	Bob	W5PKK	Rt. 2, Box 324-D		695-8430
WIGTON,	Robert A.	WA5WON/5	7600 Military Dr.W.A#50		674-0041
WILLIAMS,	George M.	W5KCV	3957 Willowbrook	78228	733-8028



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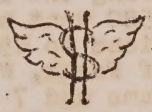
DUES ARE DUE



We wish to advise that a number of formerly active members of the San Antonio Radio Club might be under the impression they are no longer one of us because they have neglected to pay dues regularly, or have not paid at all in quite a while. Please be advised the policy of this club is to deny voting privileges only to delinquent members, unless the club takes affirmative action to declare one a non-member.

In the past two years this club has grown over THREE HUNDRED PERCENT!! (Yes, 300%)

We want you to continue your membership and support. You need the club, if you are a San Antonio area amateur. THE CLUB NEEDS YOU! Your dues payments help defray necessary club expenses, and insure that you will continue to receive the club bulletin wherein you can keep abreast of radio amateur activities in this area. Mail your annual dues ($5.00 check, please) to: SAN ANTONIO RADIO CLUB, Box 62, San Antonio, Texas, 78206. A membership card will be mailed to you.

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D O G G O N E S T O R Y T E L L E R

In response to an ad in the newspaper, a curious buyer approached the door of Frank, W5QMH, where a talking dog was listed for sale. Knocking at the door, the buyer was surprised to find the door answered by the dog.

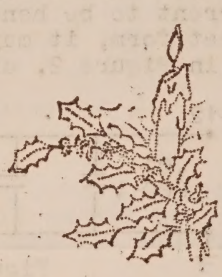
"Please buy me," pleaded the dog. "My master doesn't take care of me, doesn't feed me and he beats me with a whip. I'm really a gr-r-eat dog. In the war I won a Purple Heart, the Bronze Star and two Medals of Honor."

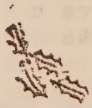
The prospective buyer was amazed. When Gerwitz walked into the room, the buyer approached him and asked why he wanted to sell such a valuable dog. "Well," said W5QMH, "I just can't stand a liar."

Christmas Dinner Dance

CQ ALL SAN ANTONIO AREA RADIO AMATEURS! The San Antonio Radio Club Annual Christmas Dinner Dance will be Saturday, December 12, at the Strange's Party House, 1513 Bandera Road. ALL Amateurs and their XYL's/YLs/OMs are invited to attend this gala event.

Social hour will be from 6 to 7 p.m. Set-ups will be furnished, so BYOB. Chips and dips will be served during this time, also during the dance. Dinner will be at 7 p.m. Don Strange has promised us a real Christmas dinner with all the trimmings. You will have a choice of turkey and dressing, three other meats, (all if you so desire)--the usual excellent dinner that they are well known for--always plenty to eat! Dancing will be from 9 to 1 a.m. Music will be played by the popular local group, Charles Benderle and his Orchestra. So wear your dancing shoes and be prepared to "trip the light fantastic!"



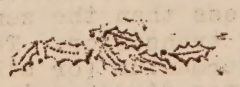


Last year there were more than 100 in attendance, including six from Houston and two from Corpus Christi. The tickets are already going at a fast rate. In fact, Bob Wheaton, W5PKK, Frank Gerwitz, W5QMH, and Larry Higgings, W5WMU, paid for their tickets even before they were printed! Ticket sales this year will be limited to 125--so-o-o get yours early! Tickets are $5.50 per person.

TICKETS CAN BE OBTAINED FROM:

Floyd Roland	W5JKU	732-9275	John Shean	W5LPO	696-1879
Gene Jank	W5EJT	342-2225	Frances Bruemmer	W5KQG	344-5134
Ella Munsch	W5TSE	344-4191	Ivan Mangold	WA5RNV	826-6515
Frank Gerwitz	W5QMH	734-5598	Lee Ulrey	K5HZR	333-0060
Terry Turner	W5ETG	434-1609	Wayne Kelly	W5FZH	344-5950
Roy Albright	W5EYB	822-7269	Dean Davis	W5BGE	735-1622

73 Dean, W5BGE
Arrangements Chairman.



6- 9-VOLT CAR SUPPLY

by W5PEK

In the past month or six weeks, a number of people have asked me about voltage adjusting circuits to permit using moderate drain transistorized equipment from automotive battery sources. Among the items were portable tape recorders, AM/FM radios, and even a mike amplifier.

One or two of the requests were complicated a bit by requesting ripple-control circuitry to reduce or eliminate alternator whine, or control feedback from the power source.

We can look at all of these problems at one time because each has a bearing on the results obtained from the other parts. A basic block diagram outlines the total system requirements, and may be followed by aid of Figure 1.

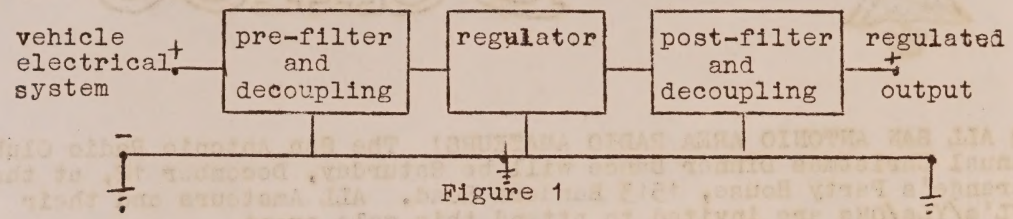


Figure 1

The pre-filter may take two forms, depending upon the desired results, current to be handled, and amount of insolation desired. In its simplest form, it may be nothing more than two capacitors in parallel, as in Figure 2, or with a choke added, as in Figure 3.

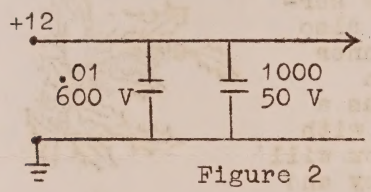


Figure 2

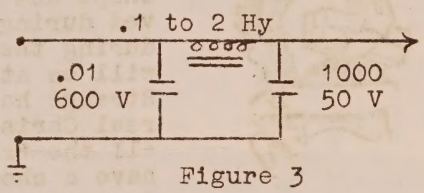


Figure 3

The choke in Figure 3 is not critical, but current handling capabilities must be carefully considered for two reasons. Transistorized devices, although operating at low voltages, require fairly high currents to develop their operating power. Transistors, after all, are current amplifying devices! Because of the high frequencies to be filtered from the power supply line, low inductance chokes are entirely adequate, and an 88 mHy toroid core, stripped and rewound with #20 wire should be entirely adequate. Winding resistance is also critical and may cause an internal voltage drop sufficient to de-regulate the output under high current loads. The above rewound toroid should not cause difficulty in this respect, but neither will it provide much filtering.

Figure 4 diagrams the regulator section. The transistor should be mounted on a heat sink to control dissipation, and it should have a high enough current handling capability to adequately perform its function.

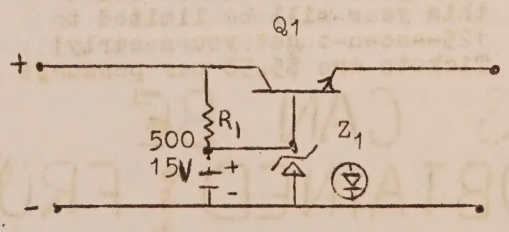


Figure 4

The zener diode Z_1 should be a one watt unit; selected to give the desired regulated output voltage. When Q_1 is a germaniun NPN type, the junction drop will be approximately 0.1 volt, and a silicon NPN type will have approximately 0.6 volts EC drop. For this reason, the regulated output voltage will measure slightly less than the zener voltage, and be of the same order as the type of transistor. This may be compensated to some extent by placing a germanium (or silicon) diode in series with the negative lead of the zener diode as indica-

ted in the inset in Figure 4. For a 6-volt output, a 6.1 or 6.9 volt zener diode may be used, and for 9 volts, a 9.1 volt zener diode is appropriate. The series diode may be used to raise the 9-volt output slightly.

Referring to Figure 5, the post-filter and decoupling network is quite simple. It consists of a load resistor and a pair of capacitors.

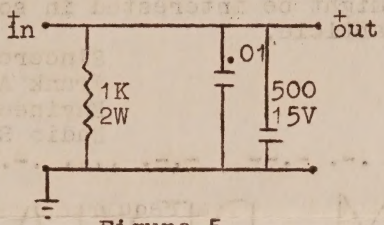


Figure 5

The complete system appears in Figure 6, and by using a switch in the negative lead of the zener diode, the circuit may be used to select a number of regulated output voltages by switching zener diodes.

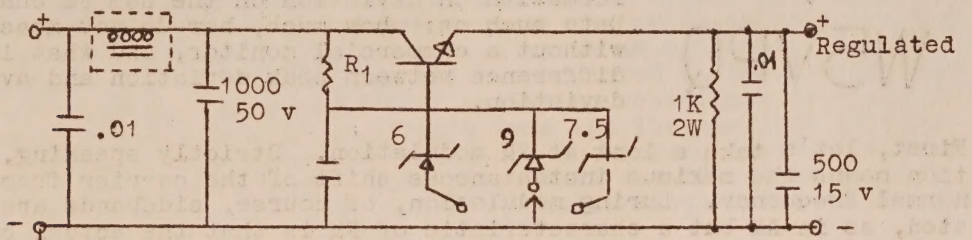


Figure 6

R_1 should be selected to provide adequate keep-alive voltage to the zener diodes, and will range from 50 to 200 ohms. It should be low enough to permit the circuit to regulate at 9 volts but not exceed the zener ratings at 6 volts.

This circuit is somewhat more complicated than necessary, and adequate regulation will be obtained by using the circuit in Figure 4, but the few extra components can prevent feedback problems, and I highly recommend their inclusion. I have used this circuit to run a portable tape recorder drawing 400-500 mils at 6 volts without difficulty, and there is no reason it cannot provide good regulation up to over an amp.

73 D. B. Olson, W5PEK.

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LETTER TO THE EDITOR

Editor, SARC Bulletin:

The other day, I was reading Volume 1, number 4 of the San Antonio Radio Club Bulletin, and the article on Public Safety communications by W5MIF caught my eye, and I was somewhat disappointed to see that Mr. Rhodes neglected to mention that WRR, as the first AM broadcast station in Texas (1920) was also the first broadcast station to be used for Public Safety purposes--i.e. to call firemen when an alarm was turned in. The Public Safety Service was not created until some years later, when specific frequencies were assigned for that specific purpose. As time went by, the operator got tired of adlibbing between fire calls, so newspapers were read. Hence, the first newscast (in Texas). After a while, this got old, so a phonograph was brought in and the first musical programming commenced. In the late '2Øs the first mobile receivers were produced, allowing reception of information regarding the fire by the fire engines while enroute.

Earlier attempts had been made for mobile reception, but the state-of-the-art at the time was not sufficiently advanced to make this practicable. These attempts included the mounting of a home-type radio in the fire engine, then installing vertical two-by-fours on either end of the vehicle and stringing a long-wire antenna between them. Other details of the experiments are sketchy. At any rate,

WRR went on the air with a Western Electric 1-A transmitter.

Later, the station bought a W. E. 6-B transmitter, rated at 5ØØ watts, which we still have, and run as an auxiliary main transmitter. This unit was originally powered by motor-generators, which provided all of the voltages, including filament. Later, the power supply was converted to tube-type, and the filaments are operated by AC.

We thought that you might be interested in some of the above as an addendum to W5MIF's article.

Sincerely,
Frank A. Schultz, III, WB5AYY
Engineering Department
Radio Station WRR. Dallas, Tex.

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FM DEVIATION

by

W5VPQ

(Ed. Note: Upon many requests, this release is a reprint from a 1966 Texas VHF-FM Society News letter.) Several members have requested information on deviation on the ham FM channels. Data such as: how much, how do you measure it without a commercial monitor, and what is the difference between peak deviation and average deviation.

First, let's take a look at FM modulation. Strictly speaking, deviation means the maximum instantaneous shift of the carrier from its normal frequency. During modulation, of course, sidebands are generated, as in AM but a characteristic of FM is that the actual carrier amplitude varies, as can be seen on a selective receiver tuned to the carrier.

Without delving further into modulation theory, we will show later how this carrier amplitude variation can be used to measure deviation exactly. First, however, a discussion of peak and average deviation is in order, plus considration of the deviation limiter found in most FM transmitters (built after 1950). As most people who have played with audio know, the ratio of average power to peak power in the voice is rather low. In other words, a person speaking into a sound level meter may show 70 db average level, but an oscilloscope or peak reading meter will show many instantaneous peaks up to 15 db higher. In order to maintain a reasonable audio signal to noise ratio, these peaks are limited, or clipped, or compressed, depending on the exact citcuit used, in order to lower the peak to average ratio, or stated more conventionally, to raise the average level (with respect to peak) The result of this limiting in an FM transmitter is the same; it raises the average deviation. In commercial services, the peak deviation is set by FCC rule; it was ±15 Kc, now the "narrow band" rule is ±5 Kc. Since greater amounts of "narrow band" equipment is appearing on amateur frequencies, the use of ±5 kHz is now suggested for ham use.

Now, this is peak deviation; commercial monitors are calibrated in peak deviation, but voltmeters usually measure average audio. This is why it is necessary to feed a relatively pure tone into the transmitter to measure deviation correctly on a monitor, or use a calibrated oscilloscope as the readout. With the peak deviation set at ±5 Kc, what is the average deviation? This depends on the gain of the entire chain from the speaker's voice up to the transmitter audio limiter. Normally, within manufacturing tolerances, about 8 to 10 db of limiting is designed into equipment. This takes into account normal speaking distance, normal voice level, whatever that is, and the original equipment microphone. The reason for selection of this amount of limiting is that it is about the maximum which can be obtained with simple circuitry without introducing appreciable distortion. With this amount of clipping, and peak deviation set to ±5 Kc, average deviation will read from 2 to 3 Kc, depending on type of monitor, individual voice characteristic, and the particular sounds. Peak deviation, as shown on a scope, or peak reading meter, will be ±5 Kc.

Now that we have thoroughly confused all of you, here is a descrip-

tion of a method for setting peak deviation to ± 5 Kc with a minimum of equipment. There are several ways of accomplishing this method, and we will attempt to touch on each of them enough to indicate their usefulness. For those of you who read ahead, we are going to describe the Bessel Null method, so if you are familiar with it from old Handbooks, etc., then go to the next chapter. The procedure is based on the fact that the amplitude of the carrier (and sidebands) is related to the audio frequency and the carrier deviation, which we want to measure, by a definite function, called Bessel functions. Without going into mathematics, which are rather involved, suffice it to say that certain audio frequencies can be chosen, which when producing a peak deviation of ±5 Kc cause the carrier to go to zero, or null. It is only necessary to apply such frequency to the microphone jack of high enough level to barely begin limiting, and while listening to the carrier on a selective receiver, adjust the deviation control so that the carrier is nulled. The two frequencies which we use are 2079.2 cps and 905.8 cps. Since simultaneous carrier nulls for these two frequencies occur only at 5 Kc deviation, and they are high enough to be out of the passband of a moderately selective auxiliary receiver, they seem to be the best choice of the several which could be used. An alternate method of sensing the carrier null has been suggested, and although I have not tried it, it should be usable. Instead of using a separate receiver, the station FM receiver may be used; an on-frequency signal from a test set or signal generator is hetrodyned at a low beat frequency against the transmitter to be measured, and the receiver limiter is used as an AM detector. A pair of earphones, or an audio amplifier can be connected to the limiter metering jack, or through about 100 K isolating resistance directly to the limiter grid; alternately, jumper from the limiter jack to the first audio grid, and use the receiver audio stages. Another possibility is to use a HF receiver tuned to one of the IF receiver. For those of you still in the dark ages, the audio frequencies to use for ±15 Kc are 2717 cps and 1733 cps.

73 George, W5VPQ.

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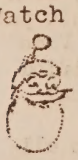
TEXAS VHF FM SOCIETY CONVENTION AT SAN ANTONIO

O.K. gang, get out your calendars and circle February 26, 27, and 28, 1971. That's when the San Antonio Repeater Organization will host their first Texas VHF FM Society Convention. There will be equipment exhibits by major manufacturers, technical and tutorial talks, the regular business session, a family dinner on Saturday night, and other attractions which will make this the convention that nobody will want to miss. The door prizes and Grand Prize Raffle should hold everybody's interest. Frequency and deviation measuring equipment will be on hand too, so bring whatever you've been trying to get on channel. Watch for additional details on registration in the next issue.

73 Bob Wheaton W5PKK, Chairman.



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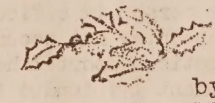
SPLATTER



by W5BGE

FLASH!! ARRL has confirmed the appointment of Lee Ulrey, K5HZR, as Section Communication Manager for South Texas. He will replace Jerry Sears, W5AIR, Houston, who has held this position for many years. Jerry had decided not to seek reelection. A thankless job ably performed by a dedicated amateur!!! Lee is well qualified for this appointment, having served for many years as EC for Bexar County, active in traffic work of all kinds, and now net manager of the 7290 traffic net. When there is an emergency, you can usually find Lee involved. He was nominated by a group from the SARC. All stations are urged to send their monthly activity reports to Lee Ulrey, K5HZR, 4215 Dysart, 78220.....John Thompson, SARC Secretary, is now WB5BGV, holding an Advanced license. It seems like only yesterday he was going to SARC Code and Theory class and having a "ruff" time with the code....Larry W5QMU, giving the radio station a hard time during a recent taping session for the Health Association--telling them he had no experience with a mike! Also, Doc Larry was heard complaining one Saturday morning on the way down to 5-points that he was cold--had the car heater on, but the convertible wasn't warming up with the top down!..... Another version of how radio operators became known as "Hams" was recently carried in the S.A.News, "Checking Up" column by L. M. Boyd... The Staff of the SARC Bulletin beams your way: M E R R Y C H R I S T M A S TO YOU AND YOURS. C U DEC. 12th!! 73 Dean, W5BGE.

ARRL ARRL ARRL NEWS AND COMMENTS FROM THE WEST GULF DIRECTOR ARRL ARRL ARRL

ELECTIONS. Any ARRL member who has not received his ballot for voting in the election of Director and Vice Director should write Headquarters ARRL immediately. Ballots are required to be in Newington before noon of the 20th, this month.

ARRL BULLETINS. In the interest of economy, Official ARRL Bulletins will no longer be mailed to clubs. The effect of this action requires us to designate some person to copy the bulletin from W1AW and bring it to the club. All amateurs are urged to copy 'on the air' bulletin transmissions. W1AW can be found 20 kc up from the low end of fone and CW segments (i.e. 7020, 7220, 14020, 14220, 21020, 21270, etc., except that on 160 the CW frequency is 1805 kc). Bulletins are transmitted daily Monday thru Saturday. Central Standard time of transmission for CW is 7:00 p.m., Fone - 8:00 p.m.

In addition, as stated in detail in September issue of this club news, our local Official Bulletin Station, W5ABQ, transmits bulletins at beginner speed on Monday night, 9:30 p.m., and at 10 w.p.m. Tuesday night 9:30 p.m., frequency 3750 kc.

160 METER CONTEST. Date - December 12 - 13. See October QST for full rules. This contest provides an excellent opportunity to re-examine propagation conditions in this former popular band. If you plan to operate, rather than just listen, here are the authorized segments for Texas: 1800 - 1825 Kc - 200w day, 50w night. 1950-1975 kc - 100w day, 25w night. 1975 - 2000 kc - 500w day, 200w input night.

ULTIMATE TRANSMATCH (July QST). On page 50, Nov. QST, Lew McCoy corrects his statement that nylon coated wire can be used on the balun in the transmatch. Use TEFLON. The transmatch built here at W5EYB works like a charm, and apparently will load the transmitter into anything. I'm still looking for a 'turns counter' dial.

EMERGENCY COMMUNICATIONS. It appears one well known amateur took umbrage at my comments in Directors Letter No. 7 regarding superfluous transmissions in traffic nets during emergencies. Frankly, this Director doesn't give a hoot what procedures are used, when no emergency exists; however, human nature being what it is, and some 48 years operating experience, causes me to believe it would be difficult, if not impossible, for a traffic net to suddenly, completely, change its modus operandi, when the emergency comes upon us. Further, it is an established fact that amateurs checking into traffic nets want to be tactfully trained in efficient procedures. Most certainly there is no place in the amateur bands for arbitrary, or commanding language or procedures. Neither should we neglect the importance of a spirit of camaraderie, but to reiterate the point involved - first, organize the net, move the traffic, with little or no verbiage, THEN do the visiting.

ARRL ELECTION RESULTS. In a situation quite different from two years ago, both nominees for Vice Director, W5AJ, and W5VCE are personal friends of mine. This put me on a spot when I was repeatedly queried as to which one I preferred as my Vice Director. Both are highly respectable, faithful ARRL members, and well qualified for the position. Regardless of the way you vote, we are certain to get a real hard-working person in office.

Probably nothing has occurred to me in recent years so heartwarming as the all-out enthusiastic support I have received from you, my numerous friends, following the announcement I intended to seek reelection as your Director. Win, lose, or draw, I'll never forget your fidelity. So, in conclusion, please let me wish each of you a real MERRY CHRISTMAS AND A HAPPY AND PROSPEROUS NEW YEAR.

73,

ROY L. ALBRIGHT, W5EYB, Director, West Gulf Division.

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